Amendments to the Specification

On page 1.

Replace the title

~~Apparatus for performing a temperature measurement function and devices baso thereon~~

with

Proportional to Absolute Temperatures Sensor in Combination with Low Voltage Temperature Compensated Bandgap Reference Output

On page 1.

Replace the following paragraph 4.

A proportional-to-absolute-temperature (PTAT) structure has been proposed which performs a temperature measurement function without requiring any external diodes or the like. A PTAT structure 10 is illustrated in Fig. 1. The PTAT structure 10 employs CMOS transistors M1, M2 and bipolar transistors B1 through Bn and C2. There is a first circuit 11 and a second circuit 12 being arranged in parallel. The first circuit 11 comprises a transistor M1, a resistor R_{temp} and a parallel arrangement of n bipolar transistors B1 through Bn (n is an integer number). These transistors B1 through Bn are diode-connected PNP bipolar transistors serving as diodes. The second circuit 12 comprises a transistor M2 and one bipolar transistor C2. An operational amplifier 13 is on its input side connected to the first circuit 11 and the second circuit 12. The transistors M1 and M2 serve as voltage dependent current sources. The operational amplifier 13 provides for a biasing of the transistor M1 and the transistor M2 by applying a gate voltage to these transistors M1, M2. The gate voltage is supplied by the output of the operational amplifier 13. A voltage V_{Rtemp} is provided across the resistor R_{temp}. It can be proven, that the voltage VR_{temp} is linearly proportional to the absolute temperature T. The following equation is valid:

$$VR_{temp} = (kT)/q \bullet ln(n)$$

Whereby the following constants are used:

~~Bolzmann~~ Boltzmann constant: $k = 1.381 \bullet 10^{23}\ J/{}^{\circ}K$

Electron charge: $q = 1.6 \bullet q \bullet 10^{19}\ C$

On page 5

Replace the following paragraph 8.

Whereas:

V_{GO}: bandgap voltage extrapolated to $T = 0^{\circ}K$; $V_{G0} \sim 1.21V$ for a CMOS process

c: technology dependent constant

I_c: collector current density of I2

k: ~~Bolzmann~~ Boltzmann constant $k = 1.381 \bullet 10^{-23}\ J/{}^{\circ}K$